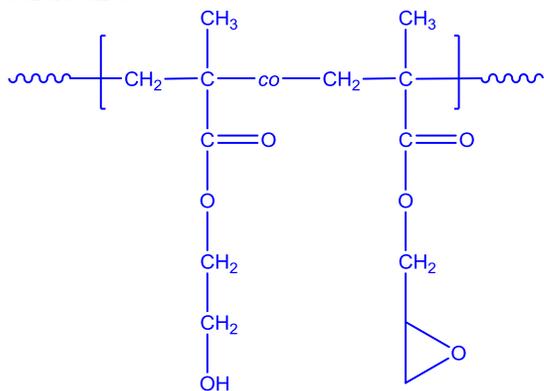


Sample Name:

Random Copolymer Poly(hydroxyethyl methacrylate-co-glycidyl methacrylate)

Sample #: P6804-HEMAGMAran

Structure:



Composition:

$M_n \times 10^3$ HEMA-co-GMA	285.8
M_w/M_n	1.83
Chemical Composition (wt%)	68.2 (GMA)

Synthesis Procedure:

Random copolymer is prepared by GTP polymerization of GMA and trimethyl siloxy ethyl methacrylate, following hydrolysis by acid to recover the free hydroxyl in HEMA.

Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from $^1\text{H-NMR}$ spectroscopy (in DMSO- d_6) by comparing the peak area the glycidyl ester at 2.6-2.8ppm with the protons of hydroxyethyl at 3.90ppm.

Thermal analysis:

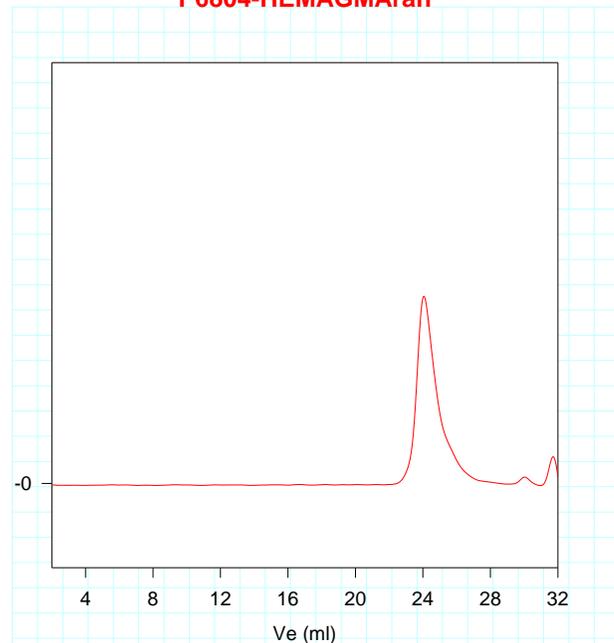
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

Random copolymer of poly(HEMA-co-GMA) is soluble in DMSO, DMF, and THF dependent on the composition.

SEC of the random copolymer:

P6804-HEMAGMAran



Size exclusion chromatograph of random copolymer: poly(HEMA-co-GMA):

$M_n=285,600$, $M_w=521,800$ $M_w/M_n=1.83$
GMA content: 68.2 wt% by NMR

Proton NMR of copolymer:

